

# PATENT COOPERATION TREATY

## PCT



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### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference ...	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/GB2004/000465	International filing date (day/month/year) 06.02.2004	Priority date (day/month/year) 22.03.2003	
International Patent Classification (IPC) or national classification and IPC F02M57/00			
Applicant SCION SPRAYS LIMITED et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  12.10.2004		Date of completion of this report  11.04.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Torle, E  Telephone No. +49 89 2399-6943 	

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/000465

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-10 as originally filed

**Claims, Numbers**

1-8 filed with telefax on 23.03.2005

**Drawings, Sheets**

1/6-6/6 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	3,5,7,8
	No: Claims	1,2,4,6
Inventive step (IS)	Yes: Claims	
	No: Claims	3,5,7,8
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

**2. Citations and explanations (Rule 70.7):**

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

D1: US20020087256 A1

D2: DE 34 43 022 A1

D3: JP59221433 A

D4: WO9835210 A1

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D1 discloses (cf. page 1, paragraph 13 - page 2, paragraph 15; figures 1 and 2):

An engine management system operating in conjunction with a sensor (12) and processing means for controlling the spark and injection process (18); whereby said engine management system is operatively connected to a single sensor (12) so that the engine management system uses only the input from one sensor; and in that said single sensor (12) is located in contact with the medium of a combustion chamber of an internal combustion engine.

The subject-matter of claim 1 is therefore not new.

Dependent claims 2-8 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step since the features of claims 2, 4, 6 are already disclosed in document D1, the features of claim 3 are disclosed in document D2, the features of claim 5 are known from document D3, the features of claim 7 are known from document D4, and the features of claim 8 is a matter of normal design choice.

CLAIMS

1. An engine management system operating in conjunction with a sensor and processing means for controlling the spark and injection process; characterised in that said engine management system is operatively connected to a single sensor so that the engine management system uses only the input from one sensor; and in that said single sensor is located in contact with the medium of a combustion chamber of an internal combustion engine.
2. An engine management system according to Claim 1, wherein the sensor is located in contact with the medium of a single combustion chamber engine.
3. An engine management system according to either of the preceding Claims, wherein said single sensor is part of a combined spark and injector plug.
4. An engine management system according to any of the preceding Claims, wherein the sensor delivers data to the processing means to determine at least the crankshaft position of said engine.
5. An engine management system according to Claim 1, wherein the processing means analyses the data delivered to establish the rate of pressure rise to determine trapped air volume in cylinder.
6. An engine management system according to either of the preceding Claims, wherein the processing means analyses the data delivered to establish the operation history of the engine.
7. A system according to any of the preceding Claims, wherein the sensor incorporates a deformable member in close proximity to the medium.
8. A system according to any of Claims 3 to 7, wherein the sensor is located radially outwards from the plug's central axis.